

## Human VEGF<sub>165</sub>

Synonyms: vascular endothelial growth factor A, VEGFA, VPF, VEGF, MVCD1

**PLEASE NOTE: ALWAYS CENTRIFUGE VIAL BEFORE OPENING**

Size	Order #	Lot #	Expiry Date
2 µg	2005.950.002		
5 µg	2005.950.005		
10 µg	2005.950.010		
20 µg	2005.950.020		
50 µg	2005.950.050		
100 µg	2005.950.100		
500 µg	2005.950.500		
1 mg	2005.950.199		

Please enquire for bulk quantities and other vial sizes

### Description

Human Vascular Endothelial Growth Factor VEGF<sub>165</sub>, a 23 kDa protein consisting of 165 amino acid residues, is produced as a homodimer. VEGF is a polypeptide growth factor and a member of the platelet-derived growth factor family. It is a specific mitogen for vascular endothelial cells and a strong angiogenic factor in vivo. Two high-affinity tyrosine kinase receptors for VEGF<sub>165</sub> have been identified, VEGFR-1 (FLT-1), and VEGFR-2 (KDR). Consistent with the endothelial cell-specific action of VEGF<sub>165</sub>, expression of both receptor genes has been found predominantly but not exclusively on endothelial cells. Expression of VEGFR-1 was also found on human monocytes, neutrophils (PMNs), bovine brain pericytes and villous and extra villous trophoblast. In addition to its action as a mitogen it is a potent vascular permeability factor (VPF) in vivo. VEGF<sub>165</sub> is also a chemo attractant molecule for monocytes and endothelial cells. 5 different proteins are generated by differential splicing: VEGF<sub>121</sub>, VEGF<sub>145</sub>, VEGF<sub>165</sub>, VEGF<sub>189</sub> and VEGF<sub>206</sub>. The most abundant form is VEGF<sub>165</sub>. Whereas VEGF<sub>121</sub> and VEGF<sub>165</sub> are secreted proteins, VEGF<sub>145</sub>, VEGF<sub>189</sub> and VEGF<sub>206</sub> are strongly cell-associated. The isoforms VEGF<sub>145</sub>, VEGF<sub>165</sub> and VEGF<sub>189</sub> bind to heparin with high affinity. VEGF<sub>165</sub> is apparently a homo-dimer, but preparations of VEGF<sub>165</sub> show some heterogeneity on SDS gels, depending on the secretion of different glycosylation patterns. All dimeric forms have similar biological activities but their bioavailability is very different. There is good evidence that different cells and tissues express different VEGF isoforms. The other members of this increasing growth factor family are VEGF-B, -C, -D and -E. Another member is the Placenta growth factor PlGF.

- **Source** *E. Coli*
- **Purity** ≥ 95 % (SDS-PAGE, silver stained)
- **Endotoxin level** < 0.1 ng per µg of human VEGF<sub>165</sub>

### Biological Activity

The ED<sub>50</sub> for stimulation of cell proliferation in human umbilical vein endothelial cells by VEGF<sub>165</sub> has been determined to be in the range of 1-5 ng/ml.

### Reconstitution

The lyophilized VEGF<sub>165</sub> should be reconstituted in 50 mM acetic acid to a concentration not lower than 50 µg/ml. For long term storage we recommend to add at least 0.1% human or bovine serum albumin.

### Amino Acid Sequence

APMAEGGGQN HHEVVKFMDV YQRSYCHPIE TLVDIFQEYP DEIEYIFKPS CVPLMRCGGC CNDEGLECVPT  
 TEESNITMQI MARIKPHQGQH IGEMSFLOHN KCECRPKKDR ARQENPCGPC SERRKHLFVQ DPQTCKCSCK  
 NTDSRCKARQ LELNERTCRC DKPRR

**Usage:** For research use only. Not for use in diagnostic or therapeutic procedures. Not for human use.

\*The Buffer may vary depending on the Lot #. Please contact our technical support if you have specific requirements.

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